

FIG.1

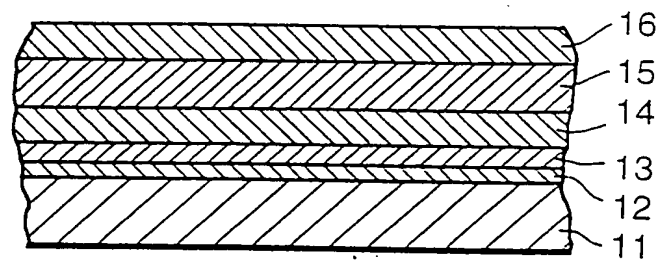


FIG.2(a)

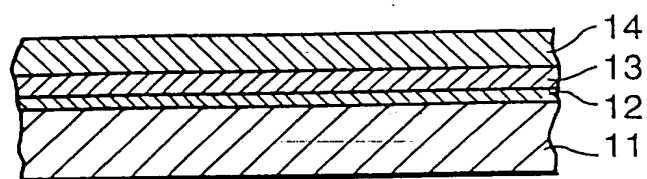


FIG.2(b)

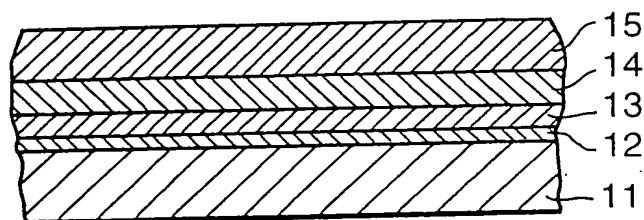


FIG.2(c)

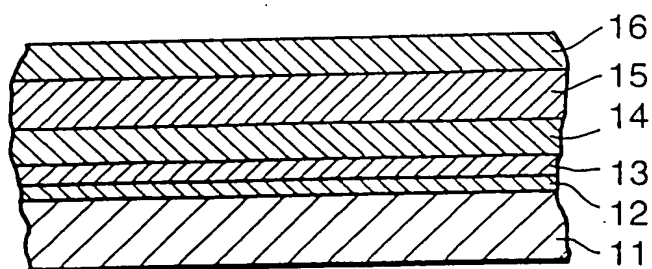


FIG.3(a)

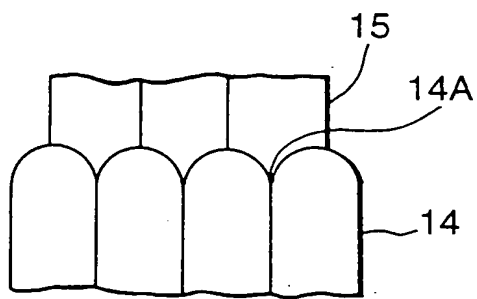


FIG.3(b)

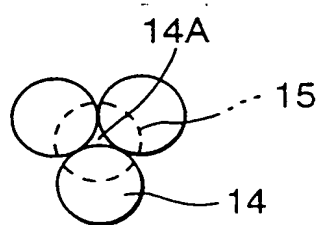


FIG.4

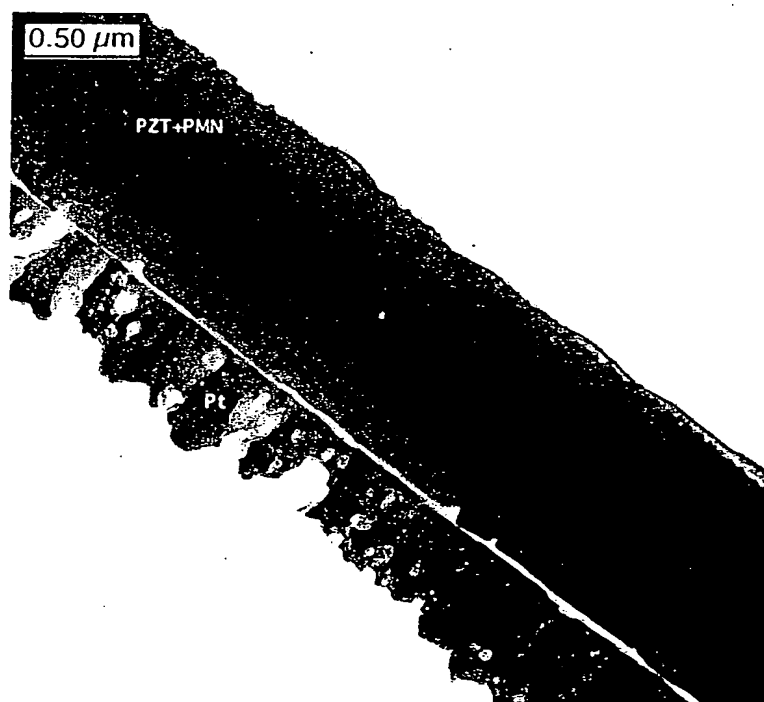


FIG.5

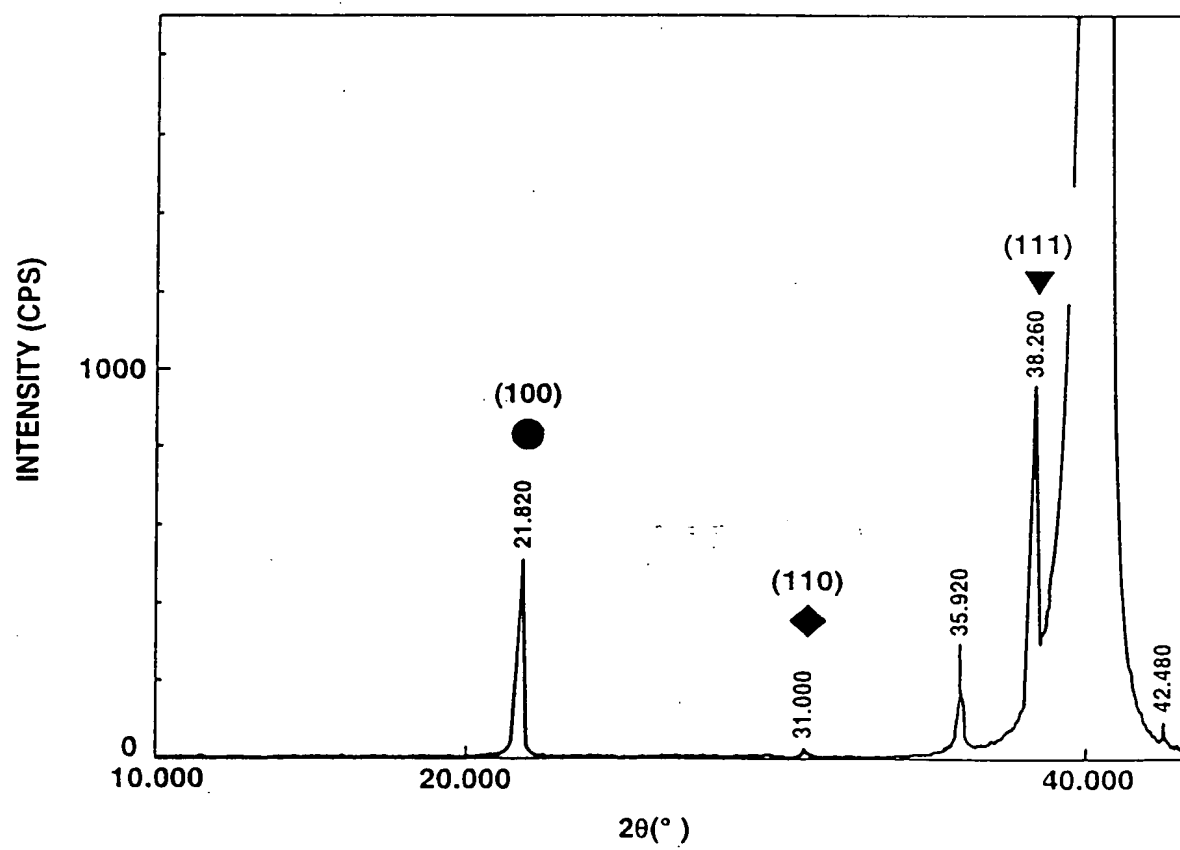


FIG.6

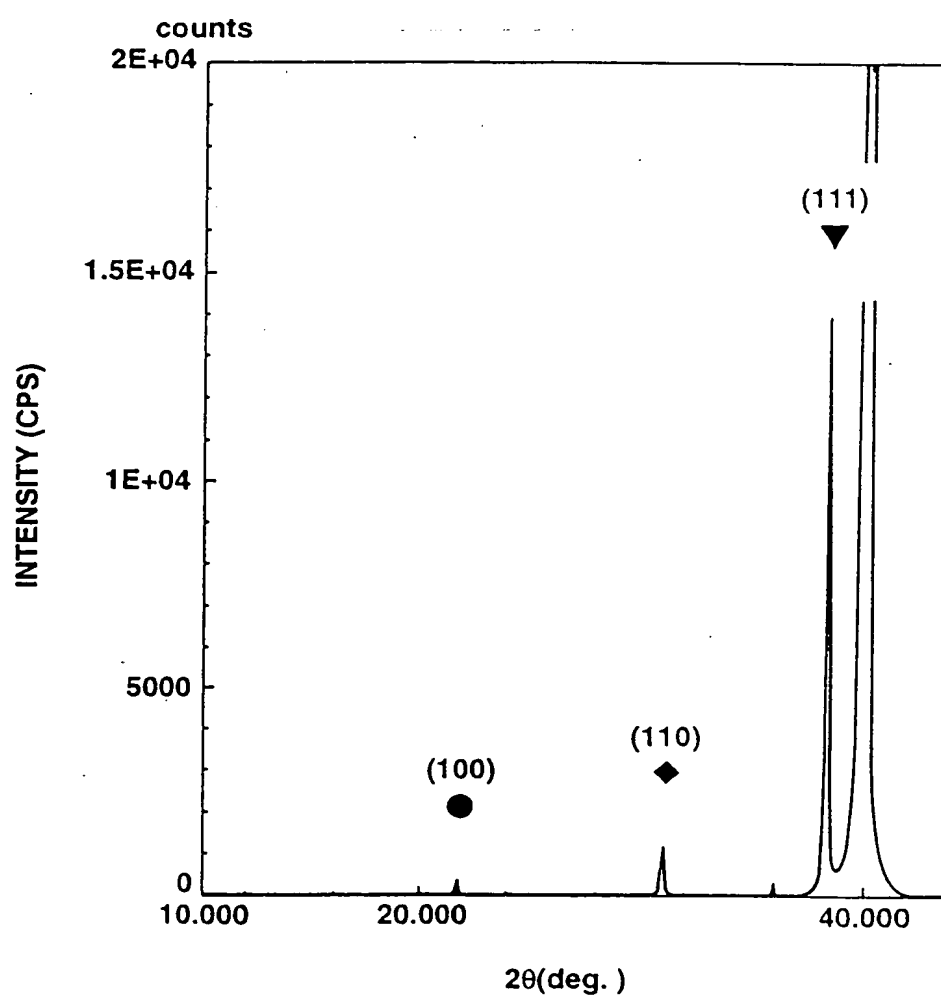


FIG.7

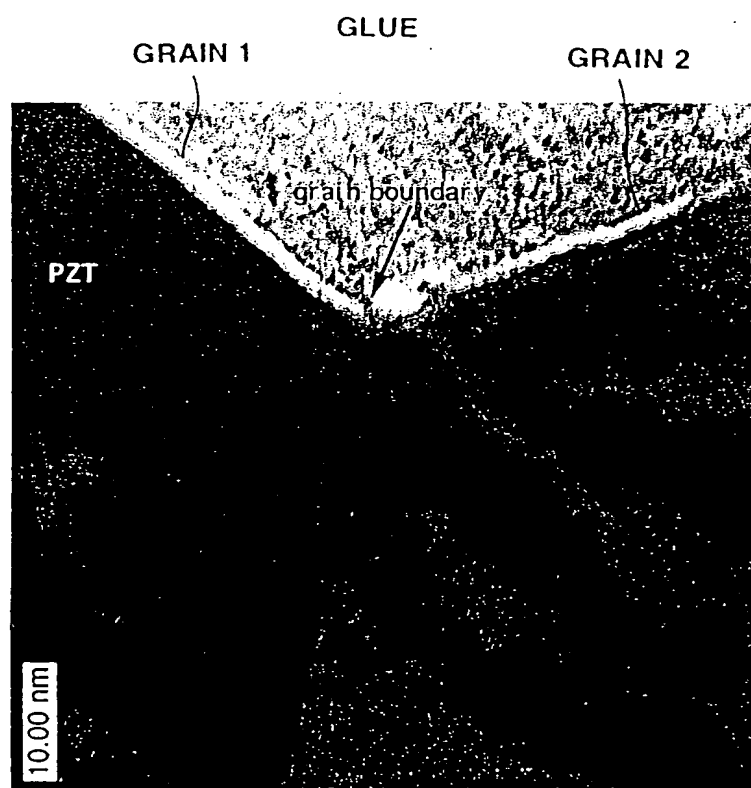
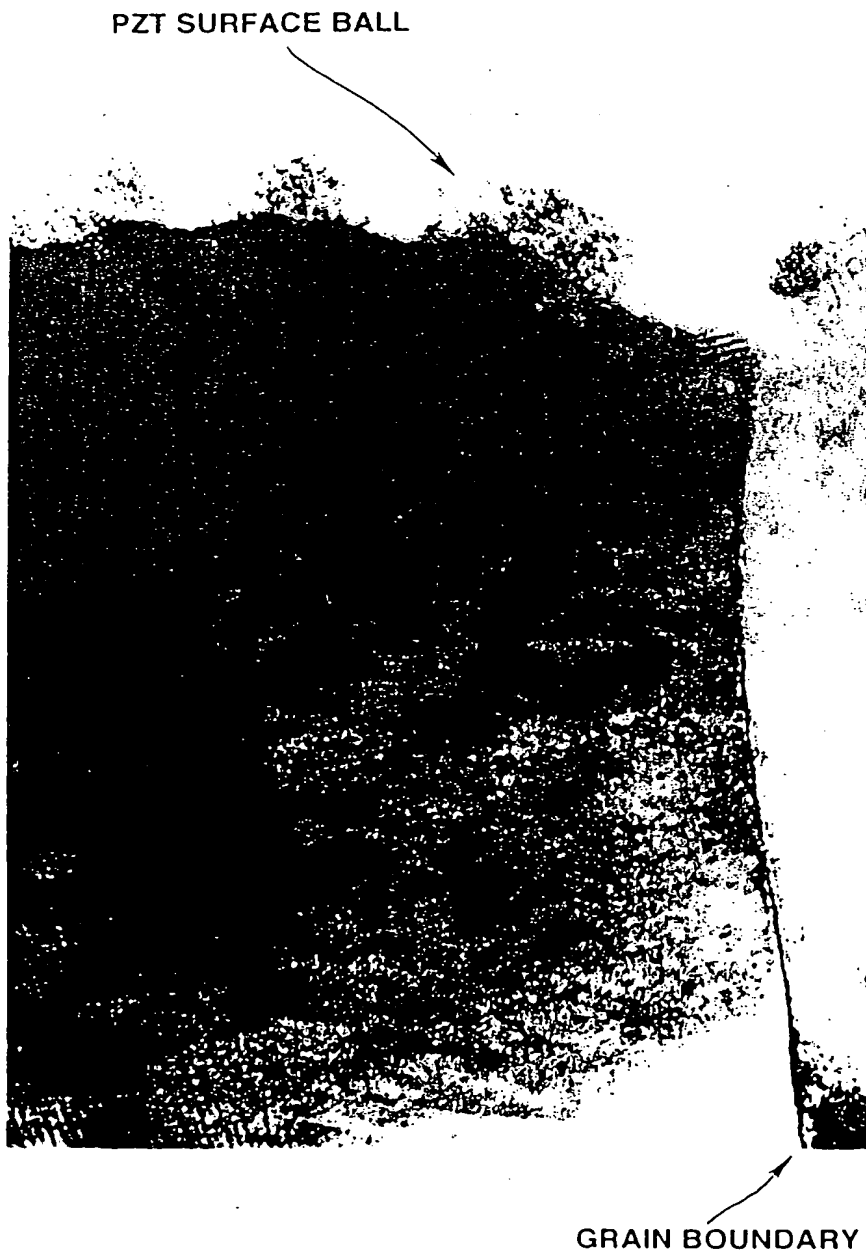


FIG.8



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FIG.9

STRAIN-ELECTRIC FIELD CHARACTERISTIC

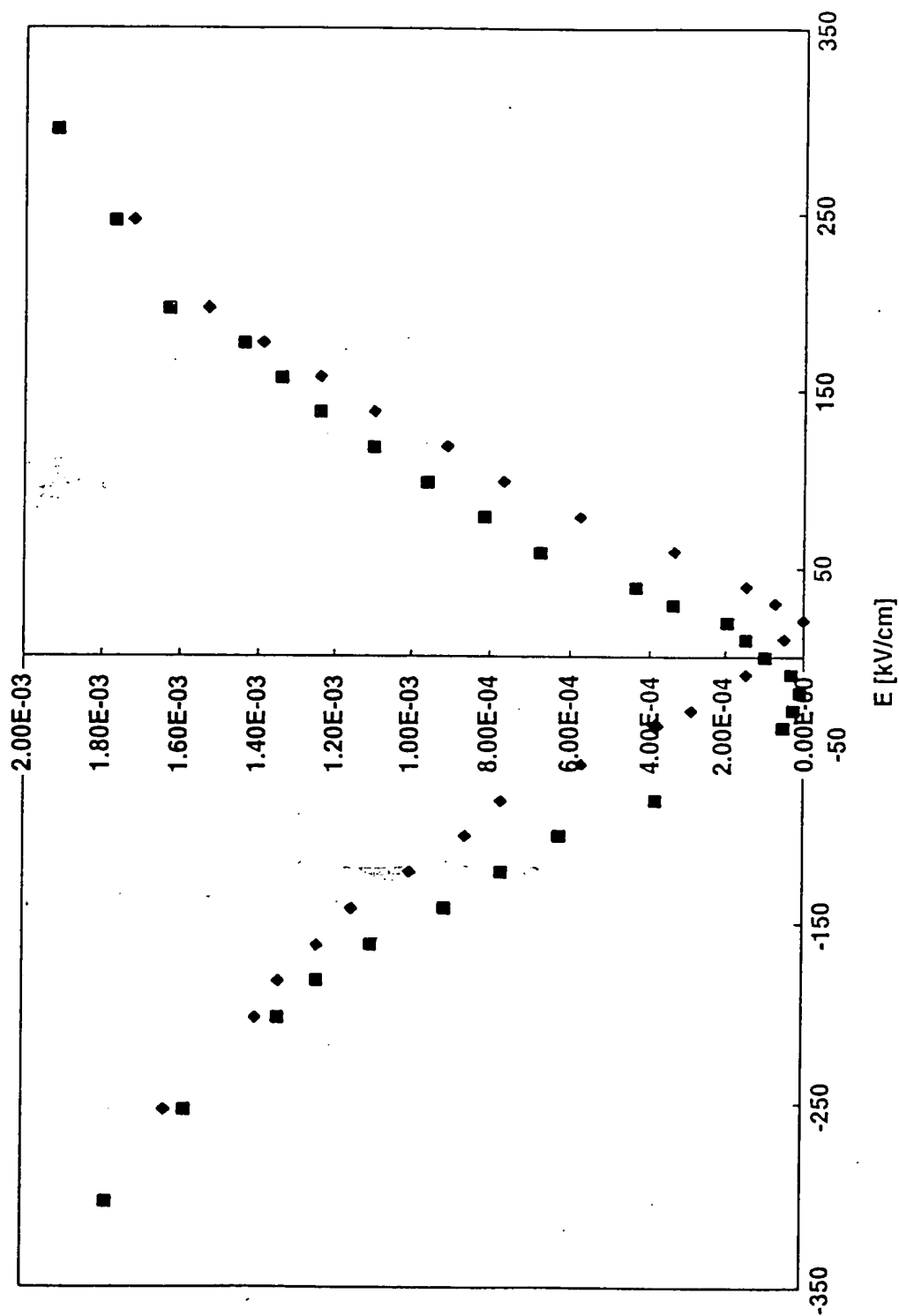


FIG.10

STRAIN-ELECTRIC FIELD CHARACTERISTIC

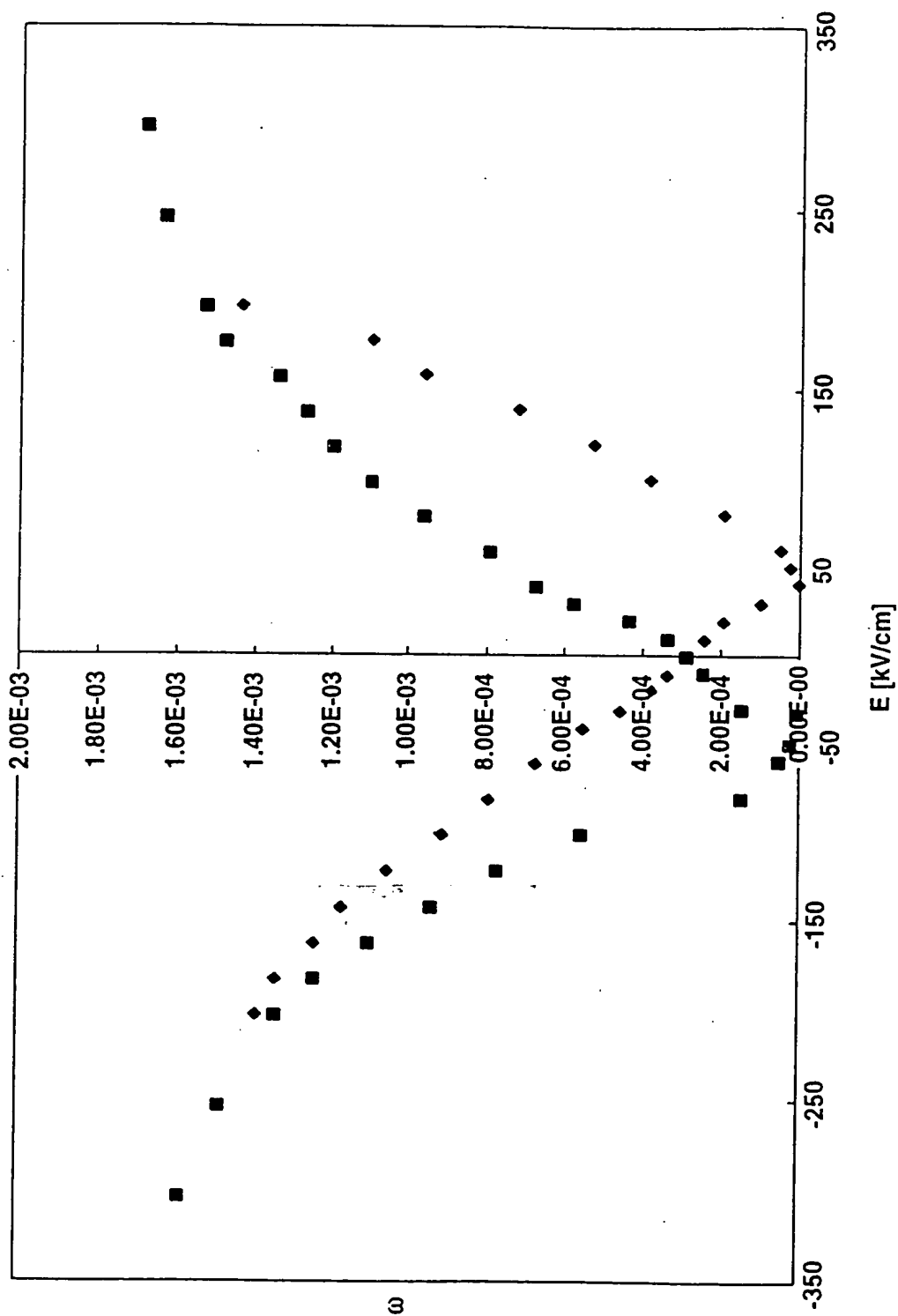
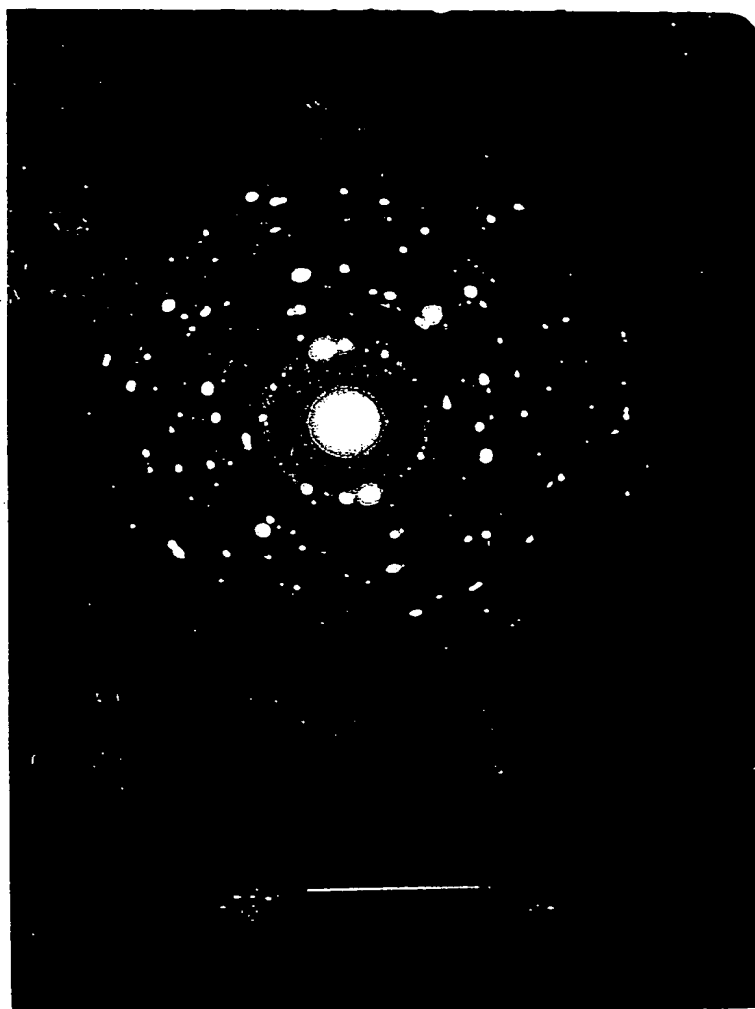


FIG.11



FOREIGN SUBSTANCES EXIST

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FIG.12



FOREIGN SUBSTANCES DO NOT EXIST

BEST AVAILABLE COPY

FIG.13

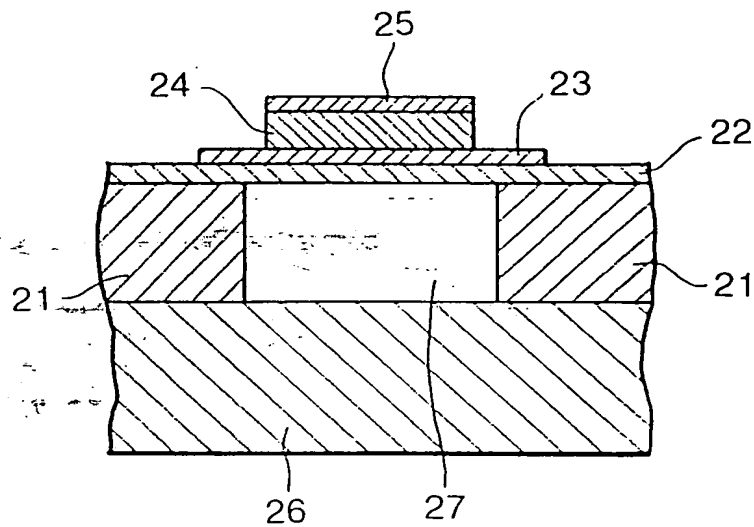
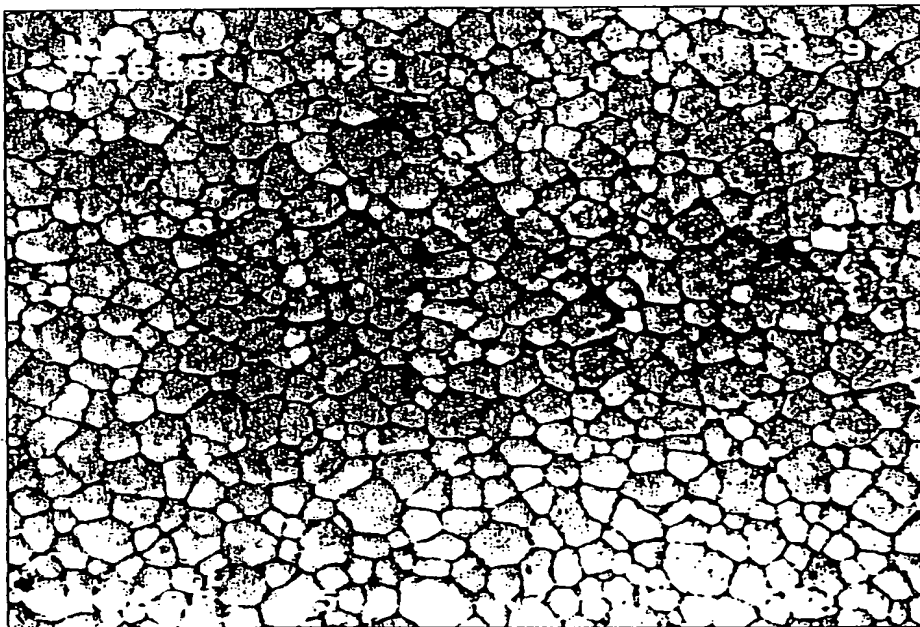


FIG.14



FIG.15



PZT SURFACE